

## **Interventions for Risk Factors in Pregnant Women in Washington, DC: An Integrated Approach (Project DC-Hope: Healthy Outcomes of Pregnancy Education)**

**Methodology:** Project DC-Healthy Outcomes of Pregnancy Education (DC-HOPE) was a randomized controlled trial to test the effect of an integrated counseling and education intervention to reduce the prevalence of cigarette smoking, environmental tobacco smoke exposure, depression, and intimate partner violence during pregnancy among African-American women and Latinas in Washington, DC. A second goal of the integrated intervention program was to improve pregnancy health outcomes as measured by infant's growth parameters and gestational age.

Eligible pregnant women seeking prenatal care at DC clinics were screened for the four risk factors. After screening, a baseline interview took place by telephone to collect additional data on demographics and risk factors. Following this interview, participants were randomized to receive the integrated intervention program or usual care. Initial screening and subsequent assessments enabled the Interventionist/Pregnancy Advisor (PA) to offer an education and counseling package that was customized to the changing needs of each woman. These intensive interventions continued with the women up to 6–10 weeks postpartum. Follow-up questionnaires were administered by telephone at two time points during pregnancy (second and third trimester), and 8–12 weeks postpartum to assess the efficacy of the intervention. In addition, saliva was collected and salivary cotinine measured at time points close to each of the telephone interviews. A brief tobacco use questionnaire was administered at the time of saliva collection. Maternal medical records were abstracted at baseline and postpartum. Maternal delivery records and infant medical records were abstracted following the baby's birth.

A total of 4,213 women were eligible for ACASI screening at the six collaborating clinic sites. Of these women, 649 refused to participate and 651 never completed the ACASI screening to determine their eligibility for the study. The remaining 2,913 women were screened for demographic and risk eligibility. Of these 2,913 women, 1,398 were eligible for participation: 1,070 provided baseline data during telephone interviewing, while 328 were not reached despite multiple call attempts (participation rate 76.5 percent). Randomization of the 1,070 women resulted in 529 assigned to the intervention group and 541 assigned to usual care. Of these, 1,044 were African American and still pregnant at the time of the baseline interview, 521 in the intervention group and 523 in the usual care group. All analyses to date were based on these 1,044 women. An imputed version of the analysis data set was also created, in which multiple imputation was used to estimate values of missing data.

**Results:** The primary study finding revealed that women in the intervention group more frequently resolved some or all of their risks during pregnancy than did women in the usual care group (odds ratio 1.61; 95% confidence interval 1.08, 2.39). The intervention was also effective in significantly reducing the number of risks reported in the postpartum period, with women in the intervention group more likely to resolve all risks (odds ratio 1.86, 95% confidence interval

1.25–2.75) or resolve at least one risk (odds ratio 1.60, 95% confidence interval 1.15–2.22). Additional analysis revealed that women in the intervention group were less likely to report recurrent episodes of intimate partner violence during pregnancy and postpartum. They were also more successful in reducing environmental tobacco smoke exposure during pregnancy.

Secondary analyses have looked at the pregnancy outcomes of DC-HOPE participants. An important finding was that women in the intervention group had significantly fewer very preterm births compared to those assigned to usual care. Birth weights were found to be lower for infants born to mothers with higher salivary cotinine levels in early or late pregnancy, indicating that there is a benefit associated with reducing cigarette smoking for pregnant women who are unable to quit altogether. Women with the highest cotinine levels (greater than 200 ng/ml) had infants with lower birth weights, a higher incidence of small-for-gestational-age infants, but significantly lower rates of preeclampsia.

Another important finding of DC-HOPE was the fact that the recruitment and retention methods used were highly successful in this population of pregnant African-American and Latina women. Retention strategies included financial and other incentives, regular updates of contact information, and appropriately selected, trained, and supervised recruitment staff and interventionists whose cultural sensitivity increased participant comfort. ACASI was found to be an effective and accepted method of collecting sensitive information about the risk status of potential participants.